

# Freshwater Fishes

By Chuck Knutson

The freshwater fishes of California are represented by 67 native resident and anadromous species (Moyle and Davis 2000). Resident fish spend their entire lives in fresh water while anadromous fish spawn in fresh water and migrate to the ocean as juveniles to grow and mature. The most common native residents are trout, minnows, and suckers. Common anadromous fishes are Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Oncorhynchus mykiss irideus*), lampreys, and sturgeons.



California roach  
(*Lavinia symmetricus*)  
Photo © Thomas Taylor

All California freshwater fish species need clean water with sufficient levels of oxygen and water temperatures within their tolerance limits. They need an adequate food supply in the form of detritus, algae, invertebrates, or small fish. Suitable spawning and rearing habitat and, in some cases, cover to protect them from predators are also required.



Prickly sculpin (*Cottus asper*)  
Photo © Thomas Taylor



Tahoe sucker (*Catostomus tahoensis*)  
Photo © Peter Rissler

Generally, native fish species richness is highest in low elevation rivers and lakes. In the Sacramento Valley and Bay/Delta regions, very high fish species diversity is present because of highly productive aquatic habitat along the Sacramento River, in the estuary where the Sacramento and San Joaquin rivers merge, and in the Suisun Marsh. The desert regions support very few native fishes, although some special status taxa, such as the pupfishes, do exist there.



Green sturgeon  
(*Acipenser medirostris*)  
Photo: Daniel W. Gotshall

## Bay/Delta Region

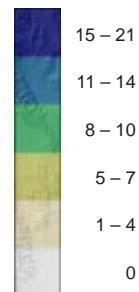
The Bay/Delta Region includes those counties that border on the San Francisco Bay or the Sacramento-San Joaquin Delta. It is one of the state's most densely populated areas, second only to the South Coast. The region is mostly hilly with low coastal mountains and several peaks rising above 3,000 feet. Oak woodlands and grasslands dominate most of the natural landscape. Coastal salt marsh is found around the San Francisco Bay, and transitions into brackish and then freshwater marsh in the Delta.



Marc Hoshovsky

## Richness of Freshwater Fishes

### Number of Native Fish Species



Source:

Fish Distributions  
Moyle et al. (1998)

Anadromous Salmonid Ranges

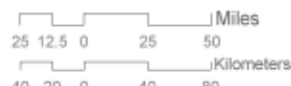
Native Trout Ranges

California Natural Diversity Database

California Department of Fish and Game (2002b and c, 2003a)

Note:

See page 5 for information about the richness maps.



### Freshwater Fish Rarity Hotspots

#### Rarity-Weighted Richness Index



Source:

California Natural Diversity Database  
California Department of Fish and Game  
(2003a)

Note:

See [atlas.dfg.ca.gov](http://atlas.dfg.ca.gov) and page 7 for information about the rarity hotspot maps.

In the Modoc Region, some special status fish taxa are very restricted in distribution. For example, the Cowhead Lake tui chub (*Gila bicolor vaccaceps*) survives only in a slough and ditches that drain Cowhead Lake (Moyle 2002). The rarity hotspots in the Mojave Region reflect the narrow distributions of several pupfish taxa.